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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,131	03/13/2002	Juergen Heitmann	112740-531	1466
29177	7590	06/30/2006	EXAMINER	
BELL, BOYD & LLOYD, LLC			GREY, CHRISTOPHER P	
P. O. BOX 1135				
CHICAGO, IL 60690-1135			ART UNIT	PAPER NUMBER
			2616	

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/088,131

Applicant(s)

HEITMANN, JUERGEN

Examiner

Christopher P. Grey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 13 March 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24-35 and 37-43 is/are rejected.
- 7) ☐ Claim(s) 36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 March 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 24, 26-28, 37-41, 45 and 46 are rejected under 35 U.S.C. 102(e) as being anticipated by Sayers et al. (US 6542754), hereinafter referred to as Sayers.

Claim 24 Sayers discloses transmitting time information via a packet oriented local area network to the base stations (Col 7 lines 18-30).

Sayers discloses adjusting a clock transmitter for a respective base station which receives the time information based on reception time and time information content of the time information (Col 13 lines 5-20 and see fig 3), where a receipt time is synchronized.

Sayers discloses controlling transmission of functional sequences, which relate to radio time frames, to the respective base station by signals from the clock transmitter (Col 17 lines 18-25).

Claim 26 Sayers discloses omitting or inserting a clock pulse, wherein Sayers discloses inserting a clock signal from the master station and distributing it to the slave stations, and furthermore, omitting these clock signals by conditioning an oscillator to

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perform insertion and transmission based on a determined frequency (Col 17 lines 26-55).

Claim 27 Sayers discloses the step of requesting the time information by the respective base station via the local area network from a time information server (Col 15 lines 5-23).

Claim 28 Sayers discloses the step of employing a standardized network protocol for the steps of requesting and transmitting time information (Col 7 lines 22-30).

Claim 29 Sayers discloses

Claim 37 Sayers discloses the time information from a plurality of time information servers is received by the respective base station via the local area network and used for adjustment of the clock transmitter (Col 15 lines 57-Col 16 line 10)), where Sayers discloses a method for using an alternative master source which is equivalent to a plurality of timing servers.

Furthermore, Sayers discloses a master receiving a number of sync signals from a number of satellites (Col 14 lines 40-52), showing the capability of a base station to use a number of signals to perform synchronization.

Claim 38 Sayers discloses a packet oriented local area network (Col 7 lines 18-30).

Sayers discloses a plurality of base station coupled to the local area network (Col 7 lines 18-30), wherein each of the base stations includes parts for synchronization which is transmitted via the local area network (Col 7 lines 18-30 and see fig 6, clock unit).

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Claim 39 Sayers discloses a time information server, coupled to the local area network, having a timer device for transmitting the time information via the local area network to the base station (Col 7 lines 18-30), with each of the base stations further including a clock transmitter (see fig 7), a time information receiving device (see fig 7) for extracting the time information from a data stream which has been received via the local area network (Col 15 lines 25-55, filtering), a clock adjustment device (see fig 7, clock synchronizer) for adjusting a clock transmitter based on reception time and time information content of the received time information (Col 13 lines 5-20 and see fig 3), where a receipt time is synchronized, and a control device for controlling timing of functional sequences, which relate to transmission of radio timeframes, based on signals from the clock transmitter (Col 17 lines 18-25).

Claim 40 Sayers discloses the time information server including a satellite navigation receiver device (see fig 7, GPS clock receiver) for receiving world time information and for presetting a time measure for the time information server based on the received world time information (Col 12 line 50-Col 13 line 4).

Claim 41 Sayers discloses wherein each of the base stations includes a time checking device for requesting the time information via the local area network (Col 15 lines 5-23).

Claim 45 Sayers discloses each of the base stations further including a PLL circuit for controlling a clock frequency of the clock transmitter (see fig 9, PLL and Col 16 lines 50-Col 17 line 17).

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Claim 46 Sayers discloses the base stations being adjacent in the local area network (see figs 1 and 5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sayers (US 6542754) in view of Aiello et al. (US 20020018458).

Claim 25 Sayers discloses the step of adjusting the clock transmitter including adjusting the frequency (Col 15 lines 25-55).

Sayers does not specifically disclose adjusting the phase of the clock transmitter.

Aiello discloses a synchronization method where a slave clock is adjusted, and the frequency and phase are adjusted accordingly (paragraph 0067).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the phase of the clock transmitter since it was known in the art that synchronization of a slave clock commonly involves adjusting the frequency and phase as disclosed by Aiello. Furthermore, Sayers discloses a phase lock loop mechanism as can be seen in fig 9, PLL.

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3. Claim 29, 30-33, 42, 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sayers (US 6542754)

Claim 29, 42 Sayers discloses using a comparator to determine the difference between an output and a received RF signal (Col 15 lines 25-55). Sayers discloses using these reference signals in order to calibrate a local clock within a slave base station (Col 15 lines 25-55).

Sayers does not specifically disclose measuring a time difference between the request for and a reception of the time information, determining an estimated value for propagation time of the time information from the time information server to the respective base station from the measured time difference, and adjusting the clock transmitter using the determined estimated value of propagation time of the time information.

It would have been obvious to one of the ordinary skill in the art at the time of the invention that Sayers uses a comparator to compare the difference between two signals, equivalent to the measuring the time difference of the references disclosed within claims 29, and 42. It would have also been obvious to one of the ordinary skill in the art at the time of the invention that measuring a significantly large difference by the comparator results in adjusting a clock (Col 15 lines 25-55) as disclosed by Sayers, equivalent to determining a result of the difference in time, and as a result adjusting a clock source. Sayers uses the calibration scheme in order to average out fluctuations in a clock output, equivalent to the present applications use of calibration.

Claim 30 Sayers discloses a microprocessor comparator (Col 15 lines 25-55).

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Claim 31 Sayers discloses the step of determining the estimated value for propagation time of the time information including one of averaging over a plurality of measured time differences and averaging over a plurality of variables defined from the plurality of measured time differences (Col 15 lines 25-55, long term averaging).

Claim 32 Sayers does not specifically disclose time information being requested at regular time intervals.

However, Sayers does disclose local crystal oscillators accompanying the clocks within the base stations (Col 15 lines 25-55). It would have been obvious to one of the ordinary skill in the art at the time of the invention that any oscillator will allow for transmissions on an oscillated (regular time) basis.

Claim 33 Sayers discloses the time information being requested by the respective base station via the local area network at time intervals which are dependent on a severity with which the measured time difference vary (Col 15 lines 25-55, a sufficiently large difference has been detected).

Claim 43 Sayers does not specifically disclose the time measurement device being a counter device.

However, it would have been obvious to one of the ordinary skill in the art at the time of the invention that any time device may be used to equivalently measure time.

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4. Claim 29, 35, 36, 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sayers (US 6542754) in view of Cox (US 5844891)

Claim 29, 44 Sayers discloses reading data elements from the data stream for further processing using a clock cycle governed by the clock transmitter; recording a filling level over the input buffer store (Col 18 lines 16-50).

Sayers does not specifically disclose temporarily storing a data stream, which is received via the local area network from a base station, in an input buffer store which operated on a first in first out principle; recording a filling level over the input buffer store and readjusting the clock frequency of the clock transmitter based on the recorded filling level.

Cox discloses temporarily storing a data stream, which is received via the local area network from a base station, in an input buffer store which operated on a first in first out principle (see fig 1, buffer);

Cox discloses recording a filling level over the input buffer store (fig 1, buffer fill level detector)

Cox discloses readjusting the clock frequency of the clock transmitter based on the recorded filling level (see fig 1 (frequency adjustment logic unit)).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to combine the clock recovery unit as disclosed by Cox within the slave base station as disclosed by Sayers. Cox discloses the invention being applicable in any packet oriented network (Col 4 lines 45-50) and the motivation is to reduce jitter and wander through clock recovery.

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Claim 35 Sayers discloses a number of mobile stations in communication with a number of base station, where data is constantly being communicated (see fig 3, elements 4)

Allowable Subject Matter

5. Claim 36 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Grey whose telephone number is (571)272-3160. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571)272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christopher Grey
Examiner
Art Unit 2616

C. Grey
June 28, 2006

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